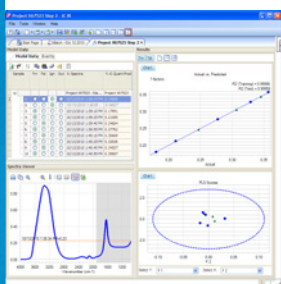


In Situ Process FTIR

Transfer Processes from Lab to Plant



Fast Quantitative Analysis

Real-time *in situ* IR analysis provides critical process information and eliminates the need for offline sampling. ReactIR 45P follows the formation and consumption of key species (such as starting materials, intermediates and products) for a comprehensive understanding and control of reactions.



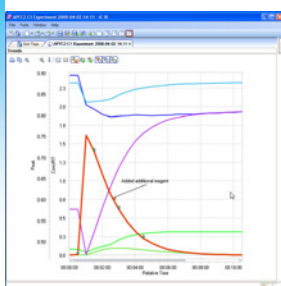
Lab to Plant

Chemists and engineers can seamlessly transfer reaction understanding developed in the laboratory to the plant. Reaction knowledge obtained in the lab can be used to monitor chemistry and develop a greater understanding of the process as the scale increases.



Any Reaction at Any Scale

A wide range of probes and sensors enable the study of virtually any reaction, under any process conditions, at any scale. This sampling technology can study most classes of chemistry including hydrogenations, Grignard reactions, lithiations, halogenations and acid chloride reactions.



iC Process™

Transfer critical control parameters determined in the lab to the plant environment. Operators have an immediate visual understanding of reaction progress and process upsets. iC Process supports full communication to Distributed Control Systems (DCS) via Modbus TCP/IP or to OPC UA external systems.



ReactIR™ 45P

Transferring a chemical process from the lab to manufacturing can be difficult. ReactIR 45P is designed to operate in the lab or a classified area, and enables chemists and engineers to develop process understanding in the lab, and then use that knowledge to transfer the process to the plant. As the scale increases, chemistry is studied under actual process conditions providing key information that is used to ensure the increase in scale does not adversely impact critical factors such as yield and product purity.

In Situ Process FTIR

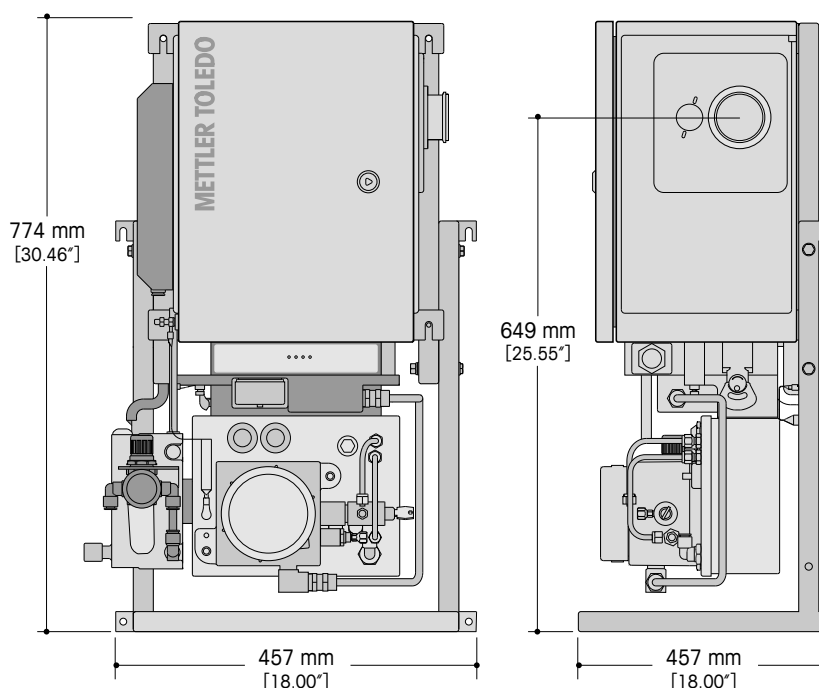
Transfer Processes from Lab to Plant

Standard Equipment



- Hardened ReactIR 45m interferometer with multi-level vibration isolation
- Purge and pressurized stainless steel enclosure tested to NEMA 4X
- Thermo Electric (TE) cooler for active enclosure temperature control
- Class I, Division 1 and Zone 1 compatibility
- Audit and event logs
- Modbus TCP/IP and OPC/UA access to process measurements and analyzer performance/health diagnostics
- iC IR software for complete reaction monitoring and analysis in the lab or plant
- iC Process software for web-based routine process monitoring in the plant
- Reaction temperature monitoring with DST Series Sampling Technology

Optional Equipment

- ReactIR 45P GP configuration – non-hazardous location compatible, no purge and pressurization
- Integrated Instrument Performance Assurance (IPA) module - validate and calibrate wavenumber reference
- DTGS or SE MCT (high sensitivity, no liquid nitrogen) detector
- Standard or custom sampling interfaces – flow cell, dip tube, drain valve
- DST Series Sampling Technology – no optical alignment FiberConduit probes and optical interfaces
- Traditional optical interfaces for enhanced sensitivity and use with DTGS detector



Technical Data

	 ReactIR 45P HL	 ReactIR 45P GP
Weight	45 kg (100 lbs)	37 kg (83 lbs)
Space requirements with frame (wxhxd)	31 x 18 x 12 in (787 x 457 x 305 mm)	23 x 18 x 12 in (584 x 457 x 305 mm)
Ambient temperature operating range	0 °C to 35 °C (32 °F to 95 °F)	
Purge (Instrument grade air)	Min: 113Lpm (4 SCFM), Range: 4.1 to 6.9 barg (60 to 100 psig)	Min: 4.7Lpm (10scfh), Range: 4.1 to 6.9 barg (60 to 100 psig)
Power	100–240V~, 50/60Hz, 5A	
Communication	LC terminated, duplex fiber optic	Ethernet
Certifications	NRTL-C: Cl D1, Group B, T4 ATEX: Ⓢ II 2(1) G Ex d op pr px [ia IIC] IIB+H2 T4 Gb	NRTL-C: UL 61010-1/CSA C22.0 No. 61010-1 CE: EN 61010-1, EN 61326-1

www.mt.com/ReactIR

For more information

METTLER TOLEDO Group

Automated Reactors and *In Situ* Analysis
Local contact: www.mt.com/contacts

Subject to technical changes
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